

RECEIVED

Page 1 of 7

1634

MAY 31 2002

TECH CENTER 1600/2900



4714 1600

05/21/02

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/628,495D

DATE: 05/21/2002

TIME: 10:29:18

Input Set : A:\EP.txt

Output Set: N:\CRF3\05212002\I628495D.raw

ENTERED

3 <110> APPLICANT: White, David
5 <120> TITLE OF INVENTION: COMPOSITIONS, KITS, AND METHODS FOR PROGNOSTICATION,
DIAGNOSIS,

6 PREVENTION, AND TREATMENT OF BONE-RELATED DISORDERS AND OTHER DISORDERS

8 <130> FILE REFERENCE: 10147-16U1

10 <140> CURRENT APPLICATION NUMBER: US 09/628,495D

11 <141> CURRENT FILING DATE: 2000-07-28

13 <150> PRIOR APPLICATION NUMBER: US 60/146,614

14 <151> PRIOR FILING DATE: 1999-07-30

16 <160> NUMBER OF SEQ ID NOS: 9

18 <170> SOFTWARE: PatentIn version 3.1

20 <210> SEQ ID NO: 1

21 <211> LENGTH: 613

22 <212> TYPE: PRT

23 <213> ORGANISM: Homo sapiens

25 <400> SEQUENCE: 1

27 Met Gly Pro Thr Leu Ala Val Pro Thr Pro Tyr Gly Cys Ile Gly Cys

28 1 5 10 15

31 Lys Leu Pro Gln Pro Glu Tyr Pro Pro Ala Leu Ile Ile Phe Met Phe

32 20 25 30

35 Cys Ala Met Val Ile Thr Ile Val Val Asp Leu Ile Gly Asn Ser Met

36 35 40 45

39 Val Ile Leu Ala Val Thr Lys Asn Lys Lys Leu Arg Asn Ser Gly Asn

40 50 55 60

43 Ile Phe Val Val Ser Leu Ser Val Ala Asp Met Leu Val Ala Ile Tyr

44 65 70 75 80

47 Pro Tyr Pro Leu Met Leu His Ala Met Ser Ile Gly Gly Trp Asp Leu

48 85 90 95

51 Ser Gln Leu Gln Cys Gln Met Val Gly Phe Ile Thr Gly Leu Ser Val

52 100 105 110

55 Val Gly Ser Ile Phe Asn Ile Val Ala Ile Ala Ile Asn Arg Tyr Cys

56 115 120 125

59 Tyr Ile Cys His Ser Leu Gln Tyr Glu Arg Ile Phe Ser Val Arg Asn

60 130 135 140

63 Thr Cys Ile Tyr Leu Val Ile Thr Trp Ile Met Thr Val Leu Ala Val

64 145 150 155 160

67 Leu Pro Asn Met Tyr Ile Gly Thr Ile Glu Tyr Asp Pro Arg Thr Tyr

68 165 170 175

71 Thr Cys Ile Phe Asn Tyr Leu Asn Asn Pro Val Phe Thr Val Thr Ile

72 180 185 190

75 Val Cys Ile His Phe Val Leu Pro Leu Leu Ile Val Gly Phe Cys Tyr

76 195 200 205

79 Val Arg Ile Trp Thr Lys Val Leu Ala Ala Arg Asp Pro Ala Gly Gln

80 210 215 220

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/628,495D

DATE: 05/21/2002

TIME: 10:29:18

Input Set : A:\EP.txt

Output Set: N:\CRF3\05212002\I628495D.raw

```

83 Asn Pro Asp Asn Gln Leu Ala Glu Val Arg Asn Phe Leu Thr Met Phe
84 225                230                235                240
87 Val Ile Phe Leu Leu Phe Ala Val Cys Trp Cys Pro Ile Asn Val Leu
88                245                250                255
91 Thr Val Leu Val Ala Val Ser Pro Lys Glu Met Ala Gly Lys Ile Pro
92                260                265                270
95 Asn Trp Leu Tyr Leu Ala Ala Tyr Phe Ile Ala Tyr Phe Asn Ser Cys
96                275                280                285
99 Leu Asn Ala Val Ile Tyr Gly Leu Leu Asn Glu Asn Phe Arg Arg Glu
100                290                295                300
103 Tyr Trp Thr Ile Phe His Ala Met Arg His Pro Ile Ile Phe Phe Pro
104 305                310                315                320
107 Gly Leu Ile Ser Asp Ile Arg Glu Met Gln Glu Ala Arg Thr Leu Ala
108                325                330                335
111 Arg Ala Arg Ala His Ala Arg Asp Gln Ala Arg Glu Gln Asp Arg Ala
112                340                345                350
115 His Ala Cys Pro Ala Val Glu Glu Thr Pro Met Asn Val Arg Asn Val
116                355                360                365
119 Pro Leu Pro Gly Asp Ala Ala Ala Gly His Pro Asp Arg Ala Ser Gly
120                370                375                380
123 His Pro Lys Pro His Ser Arg Ser Ser Ser Ala Tyr Arg Lys Ser Ala
124 385                390                395                400
127 Ser Thr His His Lys Ser Val Phe Ser His Ser Lys Ala Ala Ser Gly
128                405                410                415
131 His Leu Lys Pro Val Ser Gly His Ser Lys Pro Ala Ser Gly His Pro
132                420                425                430
135 Lys Ser Ala Thr Val Tyr Pro Lys Pro Ala Ser Val His Phe Lys Gly
136                435                440                445
139 Asp Ser Val His Phe Lys Gly Asp Ser Val His Phe Lys Pro Asp Ser
140                450                455                460
143 Val His Phe Lys Pro Ala Ser Ser Asn Pro Lys Pro Ile Thr Gly His
144 465                470                475                480
147 His Val Ser Ala Gly Ser His Ser Lys Ser Ala Phe Ser Ala Ala Thr
148                485                490                495
151 Ser His Pro Lys Pro Ile Lys Pro Ala Thr Ser His Ala Glu Pro Thr
152                500                505                510
155 Thr Ala Asp Tyr Pro Lys Pro Ala Thr Thr Ser His Pro Lys Pro Ala
156                515                520                525
159 Ala Ala Asp Asn Pro Glu Leu Ser Ala Ser His Cys Pro Glu Ile Pro
160                530                535                540
163 Ala Ile Ala His Pro Val Ser Asp Asp Ser Asp Leu Pro Glu Ser Ala
164 545                550                555                560
167 Ser Ser Pro Ala Ala Gly Pro Thr Lys Pro Ala Ala Ser Gln Leu Glu
168                565                570                575
171 Ser Asp Thr Ile Ala Asp Leu Pro Asp Pro Thr Val Val Thr Thr Ser
172                580                585                590
175 Thr Asn Asp Tyr His Asp Val Val Val Val Asp Val Glu Asp Asp Pro
176                595                600                605
179 Asp Glu Met Ala Val

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/628,495D

DATE: 05/21/2002

TIME: 10:29:18

Input Set : A:\EP.txt

Output Set: N:\CRF3\05212002\I628495D.raw

```

180      610
183 <210> SEQ ID NO: 2
184 <211> LENGTH: 1939
185 <212> TYPE: DNA
186 <213> ORGANISM: Homo sapiens
188 <400> SEQUENCE: 2
189 tgttttgcgt ctggacctgg ctgctgatcc tgagcctget gggagatctt aacgatcccc      60
191 aggagcaaca tggggcccaac cctagcgggt cccaccccct atggctgtat tggctgtaag      120
193 ctaccccagc cagaataccc accggctcta atcatcttta tgttctgcgc gatggttata      180
195 accatcggtg tagacctaat cggcaactcc atggtcattt tggctgtgac gaagaacaag      240
197 aagctccgga attctggcaa catcttcgtg gtcagtctct ctgtggccga tatgctggtg      300
199 gccatctacc catacccttt gatgctgcat gccatgtcca ttgggggctg ggatctgagc      360
201 cagttacagt gccagatggt cgggttcata acagggtcga gtgtggtcgg ctccatcttc      420
203 aacatcggtg caatcgctat caaccgttac tgctacatct gccacagcct ccagtacgaa      480
205 cggatcttca gtgtgcgcaa tacctgcata tacctggtea tcacctggat catgaccgtc      540
207 ctggctgtcc tgcccaacat gtacattggc accatcgagt acgatcctcg cacctacacc      600
209 tgcattctca actatctgaa caaccctgtc ttactgttta ccacgtctg catccacttc      660
211 gtctctccct tctcatcgtt gggtttctgc tacgtgagga tctggaccaaa agtgcctggc      720
213 gccctgagcc ctgcagggca gaatcctgac aaccaacttg ctgaggttcg caattttcta      780
215 accatgtttg tgatcttctt cctctttgca gtgtgctggt gccctatcaa cgtgctcaact      840
217 gtcttggtgg ctgtcagtcg gaaggagatg gcaggcaaga tccccaaactg gctttatctt      900
219 gcagcctact tcatagccta ctccaacagc tgcccaacg ctgtgatcta cgggctcctc      960
221 aatgagaatt tccgaagaga ataactggac atcttccatg ctatgcggca cctatcata      1020
223 ttcttccctg gctcatcag tgatattcgt gagatgcagg aggcccgta cctggcccg      1080
225 gccctgccc atgctcgcga ccaagctcgt gaacaagacc gtgcccatgc ctgtcctgct      1140
227 gtggaggaaa ccccgatgaa tgtccggaat gtccattac ctggtgatgc tgcagctggc      1200
229 caccocgacc gtgcctctgg ccaccctaag ccccatcca gatcctctc tgccatcgc      1260
231 aaatctgcct ctaccacca caagtctgtc tttagccact ccaagctgc ctctggtcac      1320
233 ctcaagcctg tctctggcca ctccaagcct gcctctggtc accccaagtc tgccaactgc      1380
235 taccctaagc ctgcctctgt ccatttcaag ggtgactctg tccatttcaa gggtgactct      1440
237 gtccatttca agcctgactc tgttcatttc aagcctgctt ccagcaaccc caagcccatc      1500
239 actggccacc atgtctctgc tggcagccac tccaagctgc ccttcagtgc tgccaaccagc      1560
241 caccctaaac ccataaagc agctaccagc catgctgagc ccaccactgc tgactatccc      1620
243 aagcctgcca ctaccagcca ccctaagccc gctgctgctg acaaccctga gctctctgcc      1680
245 tccattgccc ccgagatccc tgccattgcc caccctgtgt ctgacgacag tgacctccct      1740
247 agctcggcct ctagccctgc cgtcgggccc accaagcctg ctgccagcca gctggagtct      1800
249 gacaccatcg ctgaccttcc tgacctact gtatgacta ccagtaccaa tgattaccat      1860
251 gatgtcgtgg ttgttgatgt tgaagatgat cctgatgaaa tggctgtgtg aaaaatgctc      1920
253 tcttaggtgg ccaggcagt
256 <210> SEQ ID NO: 3
257 <211> LENGTH: 591
258 <212> TYPE: PRT
259 <213> ORGANISM: Mus sp.
261 <400> SEQUENCE: 3
263 Met Ala Thr Val Pro Lys Ser Asn Met Gly Pro Thr Lys Ala Val Pro
264 1 5 10 15
267 Thr Pro Phe Gly Cys Ile Gly Cys Lys Leu Pro Lys Pro Asp Tyr Pro
268 20 25 30
271 Pro Ala Leu Ile Ile Phe Met Phe Cys Ala Met Val Ile Thr Val Val

```

TIME: 10:29:18

Output Set: N:\CRF3\05212002\I628495D.raw

272			35					40					45				
275	Val	Asp	Leu	Ile	Gly	Asn	Ser	Met	Val	Ile	Leu	Ala	Val	Thr	Lys	Asn	
276		50					55					60					
279	Lys	Lys	Leu	Arg	Asn	Ser	Gly	Asn	Ile	Phe	Val	Ala	Ser	Leu	Ser	Val	
280	65					70					75					80	
283	Ala	Asp	Met	Leu	Val	Ala	Ile	Tyr	Pro	Tyr	Pro	Leu	Met	Leu	Tyr	Ala	
284					85					90					95		
287	Met	Ser	Val	Gly	Gly	Trp	Asp	Leu	Ser	Gln	Leu	Gln	Cys	Gln	Met	Val	
288				100					105					110			
291	Gly	Leu	Val	Thr	Gly	Leu	Ser	Val	Val	Gly	Ser	Ile	Phe	Asn	Ile	Thr	
292			115					120					125				
295	Ala	Ile	Ala	Ile	Asn	Arg	Tyr	Cys	Tyr	Ile	Cys	His	Ser	Leu	Gln	Tyr	
296		130					135					140					
299	Lys	Arg	Ile	Phe	Ser	Leu	Arg	Asn	Thr	Cys	Ile	Tyr	Leu	Val	Val	Thr	
300	145					150					155					160	
303	Trp	Val	Met	Thr	Val	Leu	Ala	Val	Leu	Pro	Asn	Met	Tyr	Ile	Gly	Thr	
304					165					170					175		
307	Ile	Glu	Tyr	Asp	Pro	Arg	Thr	Tyr	Thr	Cys	Ile	Phe	Asn	Tyr	Val	Asn	
308				180					185					190			
311	Asn	Pro	Ala	Phe	Thr	Val	Thr	Ile	Val	Cys	Ile	His	Phe	Val	Leu	Pro	
312			195					200				205					
315	Leu	Ile	Ile	Val	Gly	Tyr	Cys	Tyr	Thr	Lys	Ile	Trp	Ile	Lys	Val	Leu	
316		210					215					220					
319	Ala	Ala	Arg	Asp	Pro	Ala	Gly	Gln	Asn	Pro	Asp	Asn	Gln	Phe	Ala	Glu	
320	225					230					235					240	
323	Val	Arg	Asn	Phe	Leu	Thr	Met	Phe	Val	Ile	Phe	Leu	Leu	Phe	Ala	Val	
324					245					250					255		
327	Cys	Trp	Cys	Pro	Val	Asn	Val	Leu	Thr	Val	Leu	Val	Ala	Val	Ile	Pro	
328				260					265					270			
331	Lys	Glu	Met	Ala	Gly	Lys	Ile	Pro	Asn	Trp	Leu	Tyr	Leu	Ala	Ala	Tyr	
332			275					280				285					
335	Cys	Ile	Ala	Tyr	Phe	Asn	Ser	Cys	Leu	Asn	Ala	Ile	Ile	Tyr	Gly	Ile	
336		290					295					300					
339	Leu	Asn	Glu	Ser	Phe	Arg	Arg	Glu	Tyr	Trp	Thr	Ile	Phe	His	Ala	Met	
340	305					310					315					320	
343	Arg	His	Pro	Ile	Leu	Phe	Ile	Ser	His	Leu	Ile	Ser	Asp	Ile	Arg	Glu	
344					325					330					335		
347	Thr	Trp	Glu	Thr	Arg	Ala	Leu	Thr	Arg	Ala	Arg	Val	Arg	Ala	Arg	Asp	
348				340					345					350			
351	Gln	Val	Arg	Glu	Gln	Glu	Arg	Ala	Arg	Ala	Cys	Val	Ala	Val	Glu	Gly	
352			355					360					365				
355	Thr	Pro	Arg</														

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/628,495D

DATE: 05/21/2002

TIME: 10:29:18

Input Set : A:\EP.txt

Output Set: N:\CRF3\05212002\I628495D.raw

```

371 His Cys Lys Pro Ala Ser Val His Phe Lys Pro Ala Ser Val His Phe
372          435          440          445
375 Lys Gly Asp Ser Val Tyr Phe Lys Gly Asp Thr Val His Tyr Arg Ala
376      450          455          460
379 Ala Ser Lys Leu Val Thr Ser His Arg Ile Ser Ala Gly Pro Ser Thr
380 465          470          475          480
383 Ser His Pro Thr Ser Met Ala Gly Tyr Ile Lys Ser Gly Thr Ser His
384          485          490          495
387 Pro Ala Thr Thr Thr Val Asp Tyr Leu Glu Pro Ala Thr Thr Ser His
388          500          505          510
391 Ser Val Leu Thr Ala Val Asp Leu Pro Glu Val Ser Ala Ser His Cys
392          515          520          525
395 Leu Glu Met Thr Ser Thr Gly His Leu Arg Ala Asp Ile Ser Ala Ser
396      530          535          540
399 Val Leu Pro Ser Val Pro Phe Glu Leu Ala Ala Thr Pro Pro Asp Thr
400 545          550          555          560
403 Thr Ala Ile Pro Ile Ala Ser Gly Asp Tyr Arg Lys Val Val Leu Ile
404          565          570          575
407 Asp Asp Asp Ser Asp Asp Ser Asp Cys Ser Asp Glu Met Ala Val
408          580          585          590

```

411 <210> SEQ ID NO: 4

412 <211> LENGTH: 1800

413 <212> TYPE: DNA

414 <213> ORGANISM: Mus sp.

416 <400> SEQUENCE: 4

```

417 aagatcctga gcttgccctgg gaggaatggc cacgggtcccc aagagcaaca tgggacctac      60
419 aaaggcggtt cccaccccat tgggtgcgat tggctgtaag ctgccaaagc ccgactaccc      120
421 gccagctcta atcatcttca tgttctgcgc aatgggtcatc acagtcgtcg tagacctgat      180
423 cgggaactcc atgggtcattt tggctgtgac caagaacaag aagctccgaa attctggcaa      240
425 catctttgtg gccagcctct ctgtggcaga catgctgggt gccatctacc cctacccttt      300
427 gatgctgtat gccatgtcag ttggggggctg ggatctgagt cagctccagt gccagatggt      360
429 cgggttggtc acaggactga gcgtagtcgg ttccatcttc aacattactg ccattgccat      420
431 caaccgttac tctacatctt gccacagcct ccaatacaag cggatcttca gcctgcgcaa      480
433 cacttgcatc tatctggctg ttacctgggt catgactgtc ctggctgtcc tgccctaacat      540
435 gtacattggc accattgagt atgacctctg cacctacacc tgcattctca actatgtgaa      600
437 caatcctgcc tttaccgtga ccattgtctg catccacttc gtccctccctc tcatcatagt      660
439 tggttattgc tacacgaaaa tctggatcaa agtgctggca gcccgtgacc cagctggaca      720
441 gaatcctgac aaccagtttg ctgagggttc aaattttcta accatgtttg tgatcttct      780
443 cctttttgca gttgctgggt cctgtctaat gtgctcactg tgttgggtggc tgtcattcca      840
445 aaggaaatgg caggcaagat ccccaactgg ctttatcttg cagcctactg catagcctac      900
447 ttcaacagct gcctcaacgc catcatctac ggtatctctc atgagagttt ccgaagagaa      960
449 tactggacca tcttccatgc tatgcggcac cctatctgtt tcatctctca cctcatcagt      1020
451 gatattcggg agacttggga gacccgagct ctactcgtg cccgtgtccg tgcccgatg      1080
453 caagtccgag agcaagagcg tgcctgtgcc tgtgtcgtg tggaggggac cccaaggaac      1140
455 gtccggaatg ttctactgcc tggatgac tgcagacccc actctgatcg tgccctgtgc      1200
457 cgtcccaagc cccaaaccag gtctacttct gtctaccgca aacctgcctc tatccaccac      1260
459 aagtctatct ctggccaccc caagtctgcc tctgtttacc ctaagccagc ctctctgtgc      1320
461 cattgcaagc ctgcctctgt ccatttcaaa cccgcctctg ttcatcttcaa gggtgactct      1380
463 gtctatttca agggagacac tgtccattac agggctgctt ccaaacttgt caccagtcac      1440

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/628,495D

DATE: 05/21/2002

TIME: 10:29:19

Input Set : A:\EP.txt

Output Set: N:\CRF3\05212002\I628495D.raw